By artificially splicing the plasmid specifying production of human insulin, *Escherichia coli* can become human insulin "factories." This is one of the first practical applications of recombinant DNA technology. Insulin produced by this method has been immunologically, chemically and physically identical to insulin produced by humans. This recombinant DNA human insulin shows no traces of *E coli* contamination nor of any other side products such as proinsulin.

The major theoretic advantage of human insulin is the diminishment or avoidance of antigenic reactions, both local and systemic. Although less common, the more serious systemic insulin reactions have been associated with clinical situations in which insulin usage has been intermittent and there was a known allergy to other materials such as penicillin. Human insulin (recombinant DNA) is not a panacea and can be antigenic when administered subcutaneously. Nevertheless, this new product should be useful in certain clinical situations.

Family physicians will encounter the need for the intermittent use of insulin in gestational diabetes and during physiologically stressful periods (such as in surgery and the intensive care unit) in cases of type II diabetes. Human insulin may be the first choice in these situations. Cases of newly diagnosed insulin-dependent diabetes may benefit from the use of human insulin, particularly if they have a strong history of multiple allergies. The incidence of lipoatrophy may be diminished. Costs for one vial of insulin at one pharmacy in metropolitan Los Angeles were as follows: human insulin, $18; purified porcine insulin, $11; bovine or porcine insulin, $8. In a recent review, no evidence was found to support the use of human insulin in patients currently using older insulin preparations without allergic reactions.

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Cost–Effectiveness of Antenatal Rh Factor Immunoprophylaxis

REDUCING THE SEVERITY of Rh factor immunization, once it has occurred, is difficult. More effective by far is preventing the development of Rh factor immunization by administering Rh immune globulin. First licensed for clinical use in North America in 1968, Rh immune globulin injection will probably always prevent Rh factor immunization if given in an adequate dose before Rh factor immunization has taken place. The standard dose for prophylaxis is 300 μg. Smaller doses have been almost as effective. In England and Australia, for example, the doses are 100 μg and 125 μg, respectively. However, 300 μg of Rh immune globulin will protect a greater number of the women who occasionally have large transplacental hemorrhages.

In 1981 the American College of Obstetricians and Gynecologists reviewed protocols directed at further decreasing the frequency of Rh factor immunization by the use of Rh immune globulin in the following cases: prophylactically during the antepartum period; after amniocentesis; after antepartum hemorrhage and fetal death; after postpartum and postabortional sterilization; after transfusion of platelet concentrates and granulocytes, and in an Rh-negative, unimmunized woman (whether D^u positive or D^u negative) after delivery of an Rh-positive or D^u-positive infant. The most frequent reason for apparent postpartum failure of prophylaxis is most likely Rh factor immunization during pregnancy.

The cost-effectiveness of antepartum prophylaxis remains to be established. Treatment with Rh immune globulin at delivery only is very cost-effective. However, the addition of antenatal treatment where postpartum treatment is already routine is much less cost-effective. Furthermore, it is less cost-effective to limit treatment to women with homozygous Rh-positive husbands than to treat all women or all those with Rh-positive husbands. The possible savings by not treating women with Rh-negative fetuses is outweighed by the added costs of blood typing. Critics have also cited the increased requirements for Rh immune globulin, which may put hyperimmune Rh plasma donors at increased risk, as another disadvantage of antenatal prophylaxis.

There has already been considerable progress in reducing the incidence of Rh immunization. Routine antenatal Rh factor immunoprophylaxis is effective in further decreasing the rate of Rh factor isoimmunization by pregnancy, but greatly increases the demand for Rh immune globulin. It is appropriately done where Rh immune globulin supplies are adequate for all other needs, and cases of erythroblastosis fetalis still occur that might have been prevented by antenatal treatment. If antepartum prophylaxis is used, current recommendations are for the administration of 300 μg of Rh immune globulin at 28 weeks' gestation in an unimmunized, Rh-negative woman. Another 300-μg dose should be given after delivery of an Rh-positive or D^u-positive baby.

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Preventing Advanced Colorectal Cancer—Fecal Occult Blood Testing

RECENTLY THE American Cancer Society has initiated a three-year educational effort to change the way physicians and the public view the disease of colorectal cancer. The Colorectal Health Check (CHEC) Program will emphasize the expanded use of three standard diagnostic techniques for the early detection of colorectal carcinoma in asymptomatic patients. These tech-

niques consist of testing for occult blood in a stool specimen, rectal examination and sigmoidoscopy.

To obtain a reasonable predictive value, proponents of fecal occult blood testing have recommended certain conditions, which have included the dietary deletion of red meat, vitamin C, peroxidase-rich vegetables and nonsteroidal anti-inflammatory medications. Some have recommended adding a high fiber content to the diet during the test period. Storing stool specimens for longer than four days increases the percentage of false-negatives. Rehydration of slides is no longer recommended because of the increased number of false-positives.

Even with these refinements, there have been critics of stool guaiac screening in asymptomatic patients. The American Cancer Society currently recommends two specimens from each of three separate bowel movements, with adherence to the dietary and storage restrictions. Two studies published in 1983 have reported that most colorectal carcinomas detected by stool guaiac testing were at Dukes' stage A or B. These figures are dramatic deviations from commonly reported prevalences of from 25% to 50% for these prognostically more favorable stages of the disease.

Sontag and co-workers found that 71% of cases of cancer detected by stool guaiac were Dukes' stage A or B. A nonscreened comparison group diagnosed during the same period were found to have advanced (Dukes' C or D) disease in 75% of the cases. Hardcastle and colleagues used a prospective randomized design. In the group accepting fecal occult blood testing, 91% (11 of 12) of cases of diagnosed colorectal carcinoma was diagnosed at stage A or B. In the year following the screening period, ten cases of colorectal carcinoma were diagnosed in the control group. Of these, 60% were stages C and D.

These studies support the American Cancer Society's screening recommendations for fecal occult blood. New developments include vegetable peroxidase inactivators by Helena Laboratories and Coloscreen pads. These may assist clinicians by diminishing the number of false-negatives and improving patient compliance. Available products and their costs have been recently reviewed.

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Anorexia Nervosa

THE *Diagnostic and Statistical Manual of Mental Disorders,* 3rd Edition, (DSM III) includes anorexia nervosa as one of the "eating disorders," along with bulimia, pica, rumination disorder of infancy and atypical eating disorder. Of these, anorexia nervosa has received greatest attention recently in the lay press. It is a disorder that is associated with dysfunction at the physiologic, psychologic, familial and social levels. Recent studies have provided new information on anorexia nervosa; that from family studies is particularly intriguing in regard to the development of treatment regimens.

It is estimated that as many as 1 in 250 young women between the high-risk ages of 12 and 18 years suffer from this disorder. Cases occur in both younger and older women; less than 5% of cases occur in men. Diagnostic criteria for anorexia nervosa include an intense fear of obesity unrelated to actual body habitus, disturbance of body image, weight loss of 25% or more of original or projected weight, refusal or inability to maintain body weight and an absence of any physical illness that might otherwise account for the symptoms. Most cases occur in women from middle- to upper-class families. Families of affected persons have been described as caricatures of "perfectly normal" families; members may be unaware of chronic emotional withdrawal and isolation. Minuchin and co-workers refer to these families as "psychosomatic families" and describe them as having the characteristics of enmeshment, overprotectiveness, rigidity and an inability to tolerate or resolve conflict. Advocates of family systems approaches comment on the central and regulatory role the anorectic symptoms play in the family.

Treatment of anorexia nervosa is contingent on recognition. Management should be by physicians willing to commit themselves to involvement in a complex, difficult and sometimes frustrating disorder. Clinical approaches must be based on a certainty, shared by clinicians and family members, that weight loss beyond a medically determined level will result in admission to hospital, despite resistances encountered from the patient or her family. Tube feeding, not innocuous, is occasionally required. Physicians must insure that they are not deceived by the ruses of patients. Psychiatrists or family systems-oriented therapists with experience in the management of this disorder should be involved as early as possible. Families and individuals are often strikingly resistant to change; resolving the problem frequently involves uncovering previously denied family pathology and successfully dealing with it. Treatment and support may be required on a long-term basis. Primary care physicians and therapists must communicate openly and regularly; this is especially critical in the early months of care. As gains are made in patient weight and family function, contacts for support may be carefully spaced; physicians must recognize the potential for both early and late recurrence and for the emergence of psychosomatic problems in other family members.

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